

Environmental Protection Agency

§ 86.1816–05

in percentages specified in paragraph (a)(5) of this section if you instead comply based on one of the following alternative measures:

(i) You may comply with an alternate phase-in schedule described in this paragraph (g)(4)(i). To do this, you must give us a detailed plan for describing how you will meet the alternate phase-in schedule. You comply with the alternate phase-in schedule by calculating an evaporative phase-in index using the following equation that is at or above 1,280 for model years 2017 through 2022 (or 1,040 for model years 2018 through 2022 if you use the provisions of paragraph (g)(2)(i) of this section):

$$\text{Evaporative phase-in index} = 6 \cdot \text{APP}_{2017} + 5 \cdot \text{APP}_{2018} + 4 \cdot \text{APP}_{2019} + 3 \cdot \text{APP}_{2020} + 2 \cdot \text{APP}_{2021} + \text{APP}_{2022}$$

Where:

APP = The phase-in percentage of vehicles meeting the Tier 3 evaporative emission standards for the indicated model year, based on actual sales, as described in paragraph (a)(5) of this section.

(ii) You may comply with an alternate phase-in schedule described in this paragraph (g)(4)(ii). To do this, you must give us a detailed plan for describing how you will meet the alternate phase-in schedule. You comply with the alternate phase-in schedule by calculating an evaporative phase-in index using the following equation that is at or above 420 for model years 2017 through 2022 (or 380 for model years 2018 through 2022 if you use the provisions of paragraph (g)(2)(i) of this section):

$$\text{Evaporative phase-in index} = \text{APP}_{2017} + \text{APP}_{2018} + \text{APP}_{2019} + \text{APP}_{2020} + \text{APP}_{2021} + \text{APP}_{2022}$$

Where:

APP = The phase-in percentage of vehicles meeting the Tier 3 evaporative emission standards for the indicated model year, based on actual sales, as described in paragraph (a)(5) of this section.

(5) This paragraph (g)(5) describes an alternative approach to phasing in the evaporative and refueling emission standards for gaseous-fueled vehicles above 8,500 pounds GVWR. Under this alternative phase-in, you may disregard the requirements of this section

related to evaporative emission standards that apply for these vehicles before model year 2019. Similarly, you may disregard the refueling emission standards of this section before model year 2019 for vehicles above 10,000 pounds GVWR. For model year 2019, you may exclude from the phase-in calculation any evaporative families with vehicles that have a Job 1 date on or before March 3, 2018 (see 40 CFR 85.2304). Any vehicles not subject to Tier 3 evaporative emission standards during this phase-in period must continue to comply with the evaporative emission standards in § 86.1816–08(d); such vehicles are subject to the useful life provisions in § 86.1805–12 relative to evaporative emission standards. Each vehicle counting toward the phase-in percentage under this paragraph (g)(5) must meet all the standards that apply throughout the useful life as specified in § 86.1805–17.

(h) *Small-volume manufacturers.* Small-volume manufacturers meeting the eligibility requirements in § 86.1838 may delay complying with the requirements in this section until model year 2022. If meeting the Tier 3 standards would cause severe economic hardship, such manufacturers may ask us to approve an extended compliance deadline under the provisions of 40 CFR 1068.250, except that the solvency criterion does not apply and there is no maximum duration of the hardship relief.

[79 FR 23718, Apr. 28, 2014]

§ 86.1816–05 Emission standards for complete heavy-duty vehicles.

This section applies to 2005 and later model year complete heavy-duty vehicles (2003 model year for manufacturers choosing Otto-cycle HDE option 1 in § 86.005–1(c)(1), or 2004 model year for manufacturers choosing Otto-cycle HDE option 2 in § 86.005–1(c)(2)) fueled by gasoline, methanol, natural gas and liquefied petroleum gas fuels except as noted. This section does not apply to Medium-duty Passenger Vehicles, which are covered under § 86.1811. This section also applies to 2000 and later model year complete heavy duty vehicles participating in the early banking provisions of the averaging, trading and banking program as specified in § 86.1817–05(n). Multi-fueled vehicles

shall comply with all requirements established for each consumed fuel. For methanol fueled vehicles, references in this section to hydrocarbons or total hydrocarbons shall mean total hydrocarbon equivalents and references to non-methane hydrocarbons shall mean non-methane hydrocarbon equivalents.

(a) *Exhaust emission standards.* (1) Exhaust emissions from 2005 and later model year complete heavy-duty vehicles at and above 8,500 pounds Gross Vehicle Weight Rating but equal to or less than 10,000 Gross Vehicle Weight Rating pounds shall not exceed the following standards at full useful life:

(i) [Reserved]

(ii) *Non-methane organic gas.* 0.280 grams per mile; this requirement may be satisfied by measurement of non-methane hydrocarbons or total hydrocarbons, at the manufacturer's option.

(iii) *Carbon monoxide.* 7.3 grams per mile.

(iv) *Oxides of nitrogen.* 0.9 grams per mile.

(v) [Reserved]

(2) Exhaust emissions from 2005 and later model year complete heavy-duty vehicles above 10,000 pounds Gross Vehicle Weight Rating but less than 14,000 pounds Gross Vehicle Weight Rating shall not exceed the following standards at full useful life:

(i) [Reserved]

(ii) *Non-methane organic gas.* 0.330 grams per mile; this requirement may be satisfied by measurement of non-methane hydrocarbons or total hydrocarbons, at the manufacturer's option.

(iii) *Carbon monoxide.* 8.1 grams per mile.

(iv) *Oxides of nitrogen.* 1.0 grams per mile.

(v) [Reserved]

(b)-(c) [Reserved]

(d) *Evaporative emissions.* Evaporative hydrocarbon emissions from gasoline-fueled, natural gas-fueled, liquefied petroleum gas-fueled, and methanol-fueled complete heavy-duty vehicles shall not exceed the following standards. The standards apply equally to certification and in-use vehicles. The spitback standard also applies to newly assembled vehicles.

(1) Gasoline, natural gas, liquefied petroleum gas, and methanol fuel. For the full three-diurnal test sequence, di-

urnal plus hot soak measurements: 3.0 grams per test.

(2) *Gasoline and methanol fuel only.* For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 3.5 grams per test.

(3) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(4) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(e) *Refueling emissions*—(1) *Standards.* Refueling emissions from Otto-cycle complete heavy-duty vehicles equal to or less than 10,000 pounds Gross Vehicle Weight Rating shall be phased in, in accordance with the schedule in Table S01-5 in § 86.1810-01 not to exceed the following emission standards:

(i) For gasoline-fueled and methanol-fueled vehicles: 0.20 grams hydrocarbon per gallon (0.053 gram per liter) of fuel dispensed.

(ii) For liquefied petroleum gas-fueled vehicles: 0.15 grams hydrocarbon per gallon (0.04 gram per liter) of fuel dispensed.

(2) *Phase-in.* Complete heavy-duty vehicles subject to refueling standards must comply with the phase-in requirements found in Table S01-5 in § 86.1810-01, and must be grouped with HLDTs and MDPVs to determine phase-in compliance.

(3) *Alternate timing.* (i) For manufacturers choosing Otto-cycle HDE option 3 under § 86.005-1(c)(3), the refueling emissions standards are optional for 2004 model year complete heavy-duty vehicles.

(ii) For manufacturers choosing Otto-cycle HDE option 3 under § 86.005-1(c)(3), the manufacturer may exempt 2005 model year HDE test groups whose model year begins before July 31, 2004. Only 2005 model year HDE test groups whose model year begins on or after July 31, 2004 shall be considered (together with all 2005 model year HLDTs and MDPVs) for purposes of calculating the sales percentage for phase-in as outlined in § 86.1810-01(k).

(iii) For complete heavy-duty vehicles which have total fuel tank capacity of greater than 35 gallons, or which do not share a common fuel system with a light-duty truck or medium-duty passenger vehicle configuration, the refueling emissions standards are

optional for the 2004 and 2005 model years.

(4) *Exceptions.* The provisions of this § 86.1816-05(e) do not apply to incomplete heavy-duty vehicles optionally certified to complete heavy duty vehicle standards under the provisions of § 86.1801-01(c)(2).

(f) [Reserved]

(g) *Idle exhaust emission standards, complete heavy-duty vehicles.* Exhaust emissions of carbon monoxide from 2005 and later model year gasoline, methanol, natural gas and liquefied petroleum gas-fueled complete heavy-duty vehicles shall not exceed 0.50 percent of exhaust gas flow at curb idle for a useful life of 11 years or 120,000 miles, whichever occurs first. This does not apply for vehicles certified to the requirements of § 86.1806-05

(h) *Alternate test groups.* Manufacturers may request to group complete heavy-duty vehicles into the same test group as vehicles subject to more stringent standards, so long as those complete heavy-duty vehicles meet the most stringent standards applicable to any vehicle within that test group, as provided at § 86.1827- (a)(5) and (d)(4).

[65 FR 59970, Oct. 6, 2000, as amended at 66 FR 5190, Jan. 18, 2001]

§ 86.1816-08 Emission standards for complete heavy-duty vehicles.

Section 86.1816-08 includes text that specifies requirements that differ from those specified in § 86.1816-05. Where a paragraph in § 86.1816-05 is identical and applicable to § 86.1816-08, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see § 86.1816-05.”. This section applies to 2008 and later model year complete heavy-duty vehicles (excluding MDPVs) fueled by gasoline, methanol, natural gas and liquefied petroleum gas fuels except as noted. Multi-fueled vehicles shall comply with all requirements established for each consumed fuel. For methanol fueled vehicles, references in this section to hydrocarbons or total hydrocarbons shall mean total hydrocarbon equivalents and references to non-methane hydrocarbons shall mean non-methane hydrocarbon equivalents.

(a) *Exhaust emission standards.* (1) Exhaust emissions from 2008 and later model year complete heavy-duty vehicles at and above 8,500 pounds Gross Vehicle Weight Rating but equal to or less than 10,000 Gross Vehicle Weight Rating pounds shall not exceed the following standards at full useful life:

(i) [Reserved]

(ii) *Non-methane hydrocarbons.* (A) 0.195 grams per mile; this requirement may be satisfied by measurement of non-methane organic gas or total hydrocarbons, at the manufacturer's option. For alcohol-fueled vehicles, this standard is 0.195 grams per mile NMHCE.

(B) A manufacturer may elect to include any or all of its test groups in the NMHC emissions ABT programs for heavy-duty vehicles, within the restrictions described in § 86.1817-05, or § 86.1817-08. If the manufacturer elects to include test groups in any of these programs, the NMHC FEL may not exceed 0.28 grams per mile. This ceiling value applies whether credits for the family are derived from averaging, banking, or trading.

(iii) *Carbon monoxide.* 7.3 grams per mile.

(iv) *Oxides of nitrogen.* (A) 0.2 grams per mile.

(B) A manufacturer may elect to include any or all of its test groups in the NO_x emissions ABT programs for heavy-duty vehicles, within the restrictions described in § 86.1817-05 or § 86.1817-08. If the manufacturer elects to include test groups in any of these programs, the NO_x FEL may not exceed 0.9 grams per mile. This ceiling value applies whether credits for the family are derived from averaging, banking, or trading.

(v) *Particulate.* 0.02 grams per mile.

(vi) *Formaldehyde.* 0.032 grams per mile.

(2) Exhaust emissions from 2008 and later model year complete heavy-duty vehicles above 10,000 pounds Gross Vehicle Weight Rating but less than 14,000 pounds Gross Vehicle Weight Rating shall not exceed the following standards at full useful life:

(i) [Reserved]

(ii) *Non-methane hydrocarbons.* (A) 0.230 grams per mile; this requirement may be satisfied by measurement of